

Engineering Modernity: Hydroelectric Development in New Brunswick, 1945-1970

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Article abstract

This study explores the origins of the Mactaquac multi-purpose hydroelectric development, a high modernist mega-project built along New Brunswick's St. John River during the 1960s. Informed by Tennessee Valley Authority multi-purpose planning and supported by the availability of federal regional development funds, the New Brunswick Electric Power Commission (NBEPC) transformed Mactaquac from a simple dam into a rural modernization scheme. When a vocal opposition emerged, led by the Association for the Preservation and Development of the Saint John River in its Natural State, NBEPC engineers launched an aggressive – and ultimately successful – public relations strategy designed to silence Mactaquac's critics by linking the project with progress and modernity.

Engineering Modernity: Hydroelectric Development in New Brunswick, 1945-1970

JAMES L. KENNY AND ANDREW G. SECORD

Cette étude explore les origines de l'aménagement hydroélectrique à usages multiples de Mactaquac, un méga-barrage moderne construit sur le fleuve Ste-Jean, au Nouveau-Brunswick, dans les années 1960. S'appuyant sur la planification à usages multiples réalisée par la Tennessee Valley Authority et encouragée par la disponibilité de fonds fédéraux destinés au développement régional, la Commission d'Énergie électrique du Nouveau-Brunswick (CEENB) a transformé le simple barrage de Mactaquac en un projet de modernisation rurale. Lorsqu'une vive opposition se fit entendre, dirigée par l'Association for the Preservation and Development of the Saint John River in its Natural State (Association pour la conservation et la mise en valeur du fleuve Saint-Jean dans son état naturel), les ingénieurs de la CEENB lancèrent une vigoureuse stratégie de relations publiques destinée à faire taire les critiques de Mactaquac – et couronnée de succès – en présentant le projet comme un symbole de progrès et de modernité.

This study explores the origins of the Mactaquac multi-purpose hydroelectric development, a high modernist mega-project built along New Brunswick's St. John River during the 1960s. Informed by Tennessee Valley Authority multi-purpose planning and supported by the availability of federal regional development funds, the New Brunswick Electric Power Commission (NBEPCC) transformed Mactaquac from a simple dam into a rural modernization scheme. When a vocal opposition emerged, led by the Association for the Preservation and Development of the Saint John River in its Natural State, NBEPCC engineers launched an aggressive – and ultimately successful – public relations strategy designed to silence Mactaquac's critics by linking the project with progress and modernity.

IN THE POST-WAR ERA THE CANADIAN STATE – like other nation-states around the world – attempted a number of economic and social modernization projects. Informed by theorists who juxtaposed a modern democratic industrial society with a “backward,” parochial world, federal and provincial state planners looked to social scientists and professional planners to devise plans to modernize marginal rural economies and rural people (often through resettlement and retraining). While examples of such modernization schemes can be found throughout Canada during this period, Atlantic Canada, with its economy dependent on declining rural resource industries, was the focus of much of the state's attention. In Newfoundland, state planners tried to modernize the fishery through rationalization and the relocation of outport residents to larger centres throughout the period 1950-1975. A similar, but

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less ambitious, relocation program took place in northeastern New Brunswick in the 1965-1975 period as part of the federal-provincial Northeast Plan. Halifax was the site of an urban modernization scheme in the 1960s when the municipal government destroyed the African Canadian settlement of Africville and relocated the residents, ostensibly to improve their lives and clean up what city planners viewed as a slum. Scholars have shown that these “schemes to improve the human condition” were often seen by the local population as heavy-handed and that they ultimately failed.¹

A less well-known post-war modernization scheme is the multi-purpose hydroelectric development at Mactaquac built on New Brunswick’s St. John River in the 1960s. Conceived initially as a “power for industry” project within a broader plan to develop the hydroelectric potential of the river that runs through the United States and Canada, it was eventually recast by state planners as a modernization project that fit within the emerging regional development policy field. This article, which explores the origins of this mega-project through to 1965 (when construction began), helps us better understand state modernization policies in Atlantic Canada in a number of ways. First, it situates Mactaquac within the context of high modernism – an ideology that, according to James C. Scott, was common throughout North America in the 20th century (especially in the post-war era) and which emphasized scientific planning to control both the natural and human environment to facilitate economic and social “progress.”² As in other jurisdictions in Canada and the world during the post-war period, large hydroelectric dams in New Brunswick became tangible expressions of high modernism.³ Engineers, planners, and politicians promoted these mega-projects as the path to not only economic development but also social betterment. Second, in contrast to other regional development plans that were designed by social scientists, New Brunswick Electric Power Commission (NBEPCC) engineers were the principal agents of modernization at Mactaquac. Influenced by the ideas and discourse of the American Tennessee Valley Authority (TVA), which linked large-scale hydroelectric development and scientific planning to social and economic improvement, senior

1 Miriam Wright, *A Fishery for Modern Times: The State and the Industrialization of the Newfoundland Fishery, 1934-1968* (Don Mills, ON: Oxford, 2001); Donald J. Savoie et Maurice Beaudin, *La Lutte Pour Le Développement: le Cas Du Nord-Est* (Sillery, QC: Presses de l’Université du Québec, 1988); Jennifer J. Nelson, *Razing Africville: A Geography of Racism* (Toronto: University of Toronto Press, 2008). Earlier versions of this paper were presented to the annual meeting of the American Society for Environmental History (Houston, Texas, 2005) and the annual meeting of the Canadian Historical Association (York University, Toronto, 2006). The authors thank *Acadiensis*’s anonymous readers for their helpful comments.

2 James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1998). Scott has recently explored how high modernism shaped one of the United States’s first major social engineering projects. See James C. Scott, “High Modernist Social Engineering: The Case of the Tennessee Valley Authority,” in *Experiencing the State*, ed. Lloyd I. Rudolph and John Kurt Jacobsen (New Delhi: Oxford, 2006), 3-52.

3 On high modernism and hydroelectric development in British Columbia, see Tina Loo, “People in the Way: Modernity, Environment, and Society on the Arrow Lakes,” *BC Studies*, no. 142/143 (Summer/Autumn 2004): 161-96. Loo (165) notes that 60 per cent of Canada’s large dams were built between 1945 and 1975. On the application and symbolism of the TVA-development model in India, see Daniel Klingensmith, *“One Valley and a Thousand”: Dams, Nationalism and Development* (New Delhi: Oxford, 2007).

NBEPC electrical engineers transformed Mactaquac from a “power for industry” hydro dam to a multi-purpose and rural development project that they promoted as a symbol of modernity and progress. In doing so, engineers increasingly played the role of social engineer since they not only planned dam construction but community relocations as well. Third, as was the case with other regional modernization projects, many local residents opposed Mactaquac. Well-organized and vocal, these opponents challenged the version of modernity promoted by state planners, arguing that the environmental and social cost of hydro development was too steep. The state’s response to the project’s opponents was shaped by high modernism. Scott notes that high modernism’s “claim to speak about the improvement of the human condition with the authority of scientific knowledge” allows its promoters to act in authoritarian ways and to dismiss “competing sources of judgment.”⁴ In the case of Mactaquac, utility officials were so certain of the project’s progressive nature that they planned the development largely without public consultation and dismissed local concerns as “backward thinking” or as issues that could be solved by science and technology. The NBEPC was also able to use its growing power within the provincial state (as the province’s economic planning arm) to control the production and distribution of information and to pursue an aggressive and, ultimately, successful public relations strategy designed to silence Mactaquac’s critics by linking the success of the project with progress.⁵

The origins of the Mactaquac project lay in New Brunswick’s growing interest in state planning in the post-war period. Between 1945 and 1965, the New Brunswick provincial state – like others throughout Canada – grew dramatically and became more professional. Within this environment, the NBEPC was central to the province’s increasing planning capacity. Between 1945 and 1955 the public utility was transformed from a small, backward, patronage-ridden organization to one that was vibrant, professional, and autonomous. The utility, increasingly populated by a new generation of young professional engineers, became, during the 1950s, the lead economic planning arm of government, promoting an economic growth strategy based on the provision of power to attract industry to the province. This transformation was set in motion in the 1940s by the provincial Reconstruction Commission and, later, the provincial Resources Development Board (RDB), both of which identified the province’s lack of electrical power as a key factor in the province’s weak economy. Both bodies recommended that the NBEPC improve its forward-planning capacity and take the lead in the development of hydroelectricity along the St. John River to meet the power needs of rural residents and industrial consumers.⁶ The RDB was

4 Scott, *Seeing Like the State*, 93.

5 There are two master’s theses on aspects of the Mactaquac development. In her thesis, Katie Shawn Ferrar provides an account of the mega-project told largely from the perspective of the NBEPC. See Ferrar, “Power for Progress: The Mactaquac Hydroelectric Development and Regional Development Plans, 1964-68” (master’s thesis, University of New Brunswick, 2005). Joshua Dickison analyzes the implementation of the larger regional development plan in Dickison, “Making New Brunswickers Modern: Natural and Human Resource Development in the Mactaquac Regional Development Plan, 1965-1975” (master’s thesis, University of New Brunswick, 2006).

6 R.A. Young, “Planning for Power: The New Brunswick Electric Power Commission in the 1950s,” *Acadiensis* XII, no. 1 (Autumn 1982): 73-99; R.A. Young, ““and the people will sink into despair”:

particularly interested in the full development of this international river, which begins in Maine, winds its way through New Brunswick, and eventually empties into the Bay of Fundy. The construction of large upriver storage reservoirs in Maine would allow for the controlled release of water and thereby greatly increase the hydroelectric power potential downstream in New Brunswick.⁷

In 1950 Canada and the United States agreed to refer the question of hydroelectric development along the St. John River to the International Joint Commission (IJC).⁸ Over the next three years, NBEPC engineers, working closely with the US Army Corps engineers and American public and private power utilities, conducted a study of the hydroelectric potential of the St. John River basin (including the river's tributaries). Figure 1, taken from the IJC's 1953 Interim Report, highlights the extent of the basin. The Interim Report was significant for two reasons. First, it encouraged governments in both countries to begin planning for a more comprehensive development of the river's hydro resources and provided a rough blueprint for future developments. Of the six promising sites, three were in New Brunswick — Beechwood, Morrill, and Hawkshaw. The commissioners also approved of a proposed 20 MW (megawatt) facility being constructed by the NBEPC at the junction of the St. John River's largest tributary, the Tobique River. Second, the report presented, for the first time, a macro-economic and continentalist vision of the river. Whereas in the past the river had been viewed largely in "local" terms — as a source of fish or for personal and commercial transport — now the river was presented as an engine to power regional economic growth more generally. The report's authors acknowledged that the river had other uses, but they argued that, given anticipated future demand for electricity, hydroelectric power development had to take precedence. Moreover, the report called for the creation of a St. John River Power Exchange Pool and interconnections involving power authorities in New Brunswick and Maine.⁹ The IJC Interim Report would prove to be a very influential planning document for the next decade. The NBEPC's 1954 Annual Report included a simple illustration of full development of the St. John River as envisioned by both the IJC and the utility (see Figure 2). Beginning at a major storage site in the river's upper reaches (at Rankin

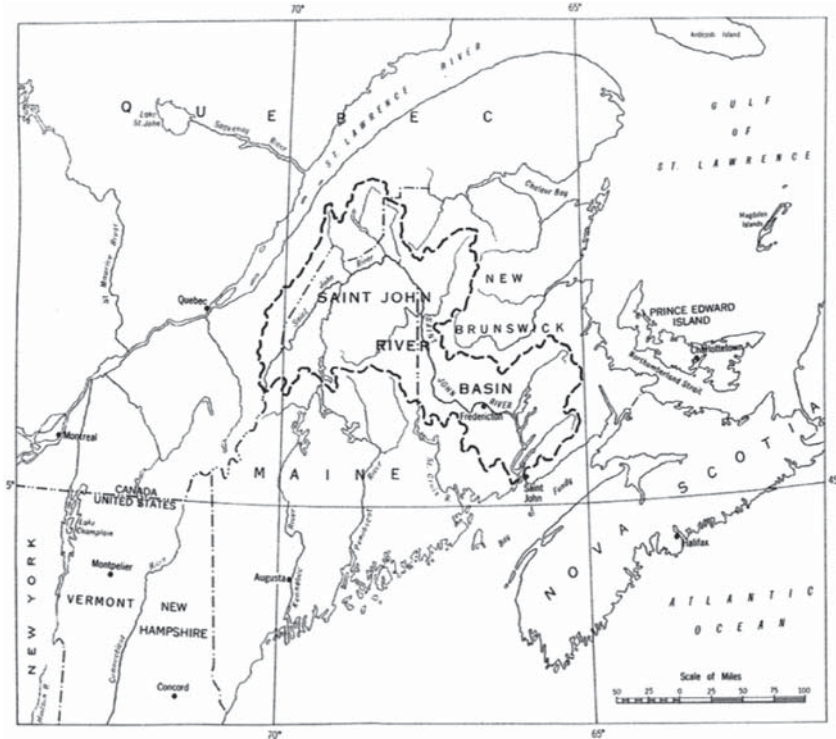
Reconstruction Policy in New Brunswick, 1942-52," *Canadian Historical Review* LXIX, no. 2 (June 1988): 127-66; James L. Kenny and Andrew Secord, "Public Power for Industry: A Re-examination of the New Brunswick Case, 1940-1960," *Acadiensis* XXX, no. 2 (Spring 2001): 84-108. Reconstruction planning committees in other provinces also focused on electric power development as crucial to post-war prosperity. See, for instance, Matthew Evenden, *Fish Versus Power: An Environmental History of the Fraser River* (Cambridge, MA: Cambridge University Press, 2004), chap. 4.

7 RDB member H.J. Rowley saw the international development of the St. John River as an eastern complement to the proposed development of the west coast's Columbia River. Noting that American authorities were requesting storage rights on the Columbia River within British Columbia, he suggested "we might at this time most opportunely introduce the St. John River watershed question and balance the West against the East with respect to reciprocal agreements." See H.J. Rowley to J.B. McNair, 10 April 1946, McNair Papers RS 414, F4a2, Provincial Archives of New Brunswick (PANB).

8 J.B. McNair to Rt. Hon. Louis St. Laurent, 8 December 1948, McNair Papers RS 414, C11, PANB.

9 Saint John River Engineering Board, *Water Resources of the Saint John River Basin: Quebec — Maine — New Brunswick. Interim Report to the International Joint Commission Under the Reference of 7 July 1952 (6 April 1953)*, pp. 113-19, RS 415, N4-e-3-IJC, PANB.

Figure 1



Saint John River Engineering Board, "Map of the Saint John River Basin," in *Water Resources of the Saint John River Basin: Quebec – Maine – New Brunswick. Interim Report to the International Joint Commission, Under the Reference of 7 July 1952 (6 April 1953)*. The map is located in a sleeve glued to the inside back cover of the report. See RS 415, N4-e-3-IJC, PANB.

Rapids in Maine), the river is pictured as a series of dams located downriver, all of which are located at sites identified by the IJC. Shortly after the IJC's report was released, the provincial government announced its intention to proceed with a 70 MW facility at Beechwood (located near Florenceville, some 40 miles downriver from the Tobique River).¹⁰

The IJC planning exercise was also important in shaping the outlook of NBEPC's new cadre of engineers, many of whom worked closely with the IJC's St. John River Engineering Board. Here they established contacts with, and learned from, large private power companies and the US Army Corps of Engineers (which played an important role in the TVA and in the construction of hydroelectric dams throughout the

¹⁰ See Figure 2 for locations of the hydroelectric sites.

United States).¹¹ This experience had a profound influence on Reg Tweeddale, who served as the NBEPC's chief engineer and, later, as its general manager. Tweeddale's interest in hydroelectricity dated back to the 1930s when, as an electrical engineering student at the University of New Brunswick, he wrote an undergraduate thesis on the hydroelectric potential of the Tobique River. After serving overseas in the RCAF during the Second World War, Tweeddale worked as a junior engineer for the NBEPC and the provincial Resources Development Board (which promoted hydroelectric development to attract industry). He also served on the Saint John River Engineering Board. In later years, he would note that this experience shaped his belief in the relationship between the expansion of power capacity and economic – and social – progress.¹² During the mid-1950s Tweeddale emerged as an energetic and articulate spokesman for the government's "power for industry" strategy, and he played an important role in planning the Beechwood and Mactaquac hydroelectric developments.¹³

By 1955 hydro development had become central to the economic growth strategy of New Brunswick's Progressive Conservative government, led by Hugh John Flemming. By most economic indicators, New Brunswick was among the poorest of the Canadian provinces. Per capita income was lower than the national average, unemployment was higher, and the economy was overly dependent on a declining forest sector. However, the discovery of large base metal deposits in northern New Brunswick in 1953 offered some hope. American mining companies flocked to the province, staking claims and promising processing operations for the job-hungry province. The price of full development of the minerals, though, was cheap power. Given the dearth of electrical power in the region, the proposed St. John River development took on a new significance. Politicians, planners, the NBEPC, and mining company officials began to promote the development of the St. John River as a means of fostering economic growth more generally. This "power for industry" growth model was trumpeted in addresses to local boards of trade, radio interviews, and advertisements in local newspapers. Premier Flemming was the most fervent supporter of the "power for industry" model. While in opposition he had described the proposed development of the St. John River as "revolutionary, something that will give our people hope, revive their ambition and render available worthwhile opportunity." And as premier he repeatedly proclaimed: "Power was the key that would unlock the treasure chest of New Brunswick."¹⁴ While Flemming provided

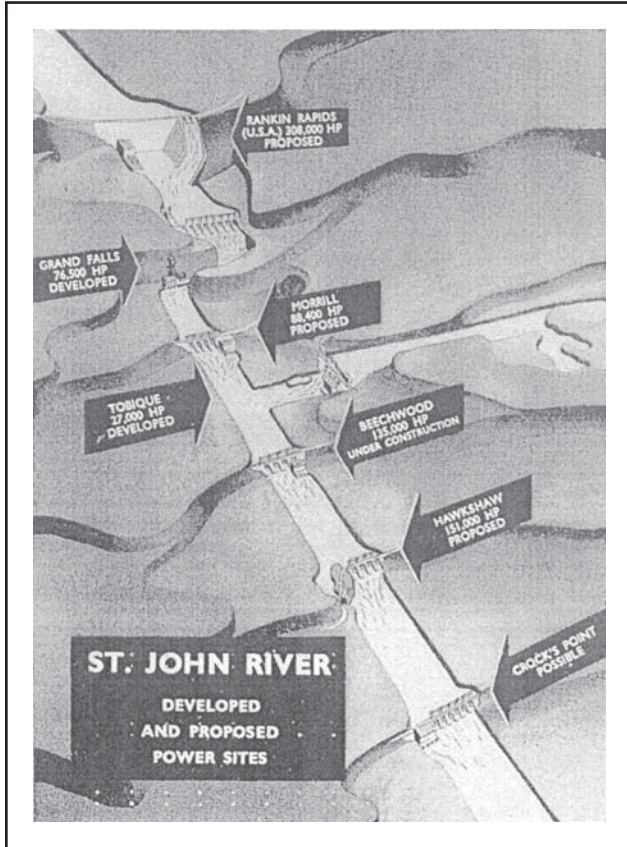
11 See for instance, William Baldwin (comp.), *The U.S. Army Corps of Engineers: A History* (Washington, DC: Defense Dep't, Army, Corps of Engineers, Office of History, 2008); and Martin Reuss, "Andrew A. Humphreys and the Development of Hydraulic Engineering: Politics and Technology in the Army Corps of Engineers, 1850-1950," *Technology & Culture* 26, no. 1 (January 1985): 1-33.

12 Reg Tweeddale, interview by Janet Toole, October 2000, transcript, MC 2923, PANB; Young, "Planning for Power," 79.

13 See Kenny and Secord, "Public Power for Industry."

14 "Provincial Affairs," 7 May 1955, Hugh John Flemming Papers, RS 415, Df1, PANB. On the development of the province's base metal industry, see James Kenny, "A New Dependency: State, Local Capital, and the Development of New Brunswick's Base Metal Industry, 1960-70," *Canadian Historical Review* 78, no. 1 (March 1997): 1-39; and James Kenny, "'We must speculate to accumulate!': Mineral Development and the Limits of State Intervention, New Brunswick, 1952-60," *Acadiensis* XXIII, no. 2 (Spring 1994): 94-123.

Figure 2



Source: New Brunswick Electric Power Commission, Annual Report (1954).

political support, the NBEPC played the leading role in planning, promoting, and managing hydro development. The provincial government gave the public utility more autonomy in planning and promoting electrical developments, and provided it as well with favorable legislation that, among other things, granted the NBEPC wide powers for the expropriation of private lands. Armed with these new powers and the support of both the Flemming government and the IJC, the NBEPC built hydroelectric plants at Tobique and Beechwood in 1953 and 1958 respectively. Increasingly, the NBEPC was becoming the economic planning arm of the provincial state.¹⁵

15 Young, "Planning for Power"; Kenny and Secord, "Public Power for Industry."

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Most New Brunswickers accepted the “power for industry” growth strategy, but there were pockets of opposition, particularly among residents living near the Tobique and Beechwood dams. Despite the construction of a fish ladder and elevator system, both hydro dams seriously impeded the movement of salmon upriver to and from spawning grounds. The NBEPCC was inundated with protests from private fishing clubs and the local Maliseets, the latter of whom depended on the salmon fishery for food as well as for regular employment as guides for fishing tourists.¹⁶ The utility ultimately faced a total of 14 lawsuits from fishing clubs and the Tobique First Nation. NBEPCC officials adamantly denied responsibility for the loss of the fishery, arguing that, under the provincial Power Act of 1952, the utility was responsible only for losses in real property created by flooding. Moreover, since the developments were in the public interest (and everybody would benefit from the general economic growth that would result from hydroelectric development), utility engineers argued that the suits were illegitimate. These suits would carry on well into the next decade before the NBEPCC eventually settled them out of court.¹⁷

The experience of the 1950s would inform the NBEPCC’s approach to future hydroelectric developments. The most pressing political problem related to hydro development appeared to be the impact on the river’s salmon fishery, and this was something that utility engineers were confident that they could overcome with better planning and technology. A sub-committee of the Federal-Provincial Study Group on the Atlantic Salmon was established to examine the impact of hydro developments on the St. John River fishery. Over the next decade, utility engineers worked with federal fisheries scientists to find technical solutions to the environmental and political problem of declining salmon stocks. Despite the concerns of federal officials regarding the impact on the river’s salmon population, provincial officials came away from this hydro development experience with little reason to question the public’s support of further hydro developments and a strong faith in hydro’s role as a tool to revitalize the provincial economy.¹⁸

16 An example of the protests emanating from the Tobique Salmon Club is B.S. Moore to Flemming, 21 November 1958, Flemming Papers, RS 415, F-5B, PANB. First Nation protests were also reported by the Department of Indian Affairs. See F.B. McKinnon to Indian Affairs Branch, 28 April 1959, Indian Affairs Records, RG 10, vol. 8348, file 88/31-3-7, Library and Archives Canada (LAC). On the employment of Maliseet guides, see Bill Parenteau and James Kenny, “Native Economies in Transition: New Brunswick, 1867-1930,” *Journal of the Canadian Historical Association* 13, no. 1 (2002): 49-72.

17 The utility settled the Tobique First Nation’s \$150,000 lawsuit in 1962 for \$50,000. See Compensation action: Her Majesty . . . and the Tobique Band of Indians . . . and the New Brunswick Electric Power Commission, August 1960, as well as B.G. Clench to Indian Affairs Branch, 12 January 1962, Indian Affairs Records, RG 10, vol. 8348, file 88/31-3-7, LAC. The lawsuits with the private fishing clubs were settled in 1965 and 1966 for \$675,000. See NBEPCC Minutes: 30 May 1966, 14 May 1966, 17 August 1967, Central Records, NB Power Archives, Fredericton, NB.

18 On DFO’s concerns, see Notes on the Meeting of the Federal Provincial Fisheries Committee, 20 January 1959, Saint John River Board (SJR) Records, RS 234, file 3, PANB. Utility and fisheries officials considered a number of technical solutions to the fisheries problem, including a more sophisticated elevator and fishway system as well as an optimum flow of water to ensure adequate oxygenation in the river. For instance, see A.L. Pritchard to R.H. Clark, 7 July 1959, 11 May 1960, SJRB Records, RS 234, file 15, PANB; J.R. Menzies to E.S. Fellows, 9 May 1960, SJRB Records, RS 234, file 16, PANB; “Notes on Agreements and Discussions with the New Brunswick Electric

The NBEPC began planning the next phase of development of the St. John River almost immediately after the opening of Beechwood. In 1958, Ontario-based hydro consultants H.G. Acres Company Limited (Acres) was contracted to identify potential hydropower sites along the river in New Brunswick and to determine the impact of American proposals for the headwaters of the St. John River in Maine. Of particular interest was an IJC investigation into a proposal to build an international tidal project on the Passamaquoddy Bay to take advantage of the Bay of Fundy's tides. As part of that study the IJC was also considering the impact of hydro development of the upper St. John River (at Rankin Rapids, Maine) on the tidal project's feasibility. In March 1959, Ottawa, which was encouraging hydroelectric developments in other provinces, joined the planning process when it created the federal-provincial Saint John River Board – ostensibly to study the impact of the proposed developments in Maine on potential hydro sites downriver in New Brunswick.¹⁹ The federal government was represented by two members of the Department of Northern Affairs and Natural Resources' Water Resources Branch, and New Brunswick was represented by John S. Bates, chairman of the provincial Water Authority, as well as Reg Tweeddale, who now occupied the position of general manager at the NBEPC. Tweeddale would prove to be the most influential member of the board. Although it was supposed to focus on the impact of potential hydro developments in Maine on New Brunswick's development plans, Tweeddale used the board to help plan the NBEPC's next major hydro developments. The board expanded its mandate to consider an "overall scheme of development for the Saint John River" and, later, to assess which specific power projects in New Brunswick would be viable regardless of whether or not Maine developed the upper reaches of the river.²⁰ The board contracted Acres to conduct all of its technical analysis, in collaboration with the NBEPC.

The board's 1960 report, entitled "Effects of Storage on Power Generation in New Brunswick," made the economic and technical case for a large dam on the New Brunswick side of the St. John River and set the stage for the construction of Mactaquac. First, based on Acres's analysis, the board concluded that demand for power in New Brunswick would increase 530 per cent (from 1,193 to 6,282 million kilowatt hours) between 1960 and 1980.²¹ Second, it found that proposed storage in Maine would benefit downstream hydroelectric facilities by about \$1 million annually. However, it also concluded that, if Rankin Rapids in Maine was not developed, "full development" of the St. John River would be economical provided that new hydro plants were integrated with thermal electric plants. Thermal power would provide base load power while hydroelectricity could be used to provide

Power Commission Regarding Mactaquac Fish Facilities," undated, Department of Fisheries Records, RG 23, acc. 83-84/120, box 63, file 719-6-24, pt. 4, LAC.

19 E.A. Côté to R.E. Tweeddale, 1 October 1958; Terms of Reference: Saint John River Board, p. 1, SJRB Records, RS 234, file 1, PANB; E.A. Côté to R.E. Tweeddale, 9 July 1958, SJRB Records, RS 234, file 1, PANB.

20 "Saint John River Board Minutes of the First Meeting, held on 19 and 20 March 1959"; Tweeddale to H.G. Acres, 14 December 1958; and General Manager, Acres to Chairman, Saint John River Board, 8 April 1959, all in SJRB Records, RS 234, A-3, PANB; "Report of the Saint John River Board to House of Commons Committee," SJRB Records, RS 234-A-1, PANB.

21 *Effects of Storage on Power Generation in New Brunswick, Report of the Saint John River Board* (Fredericton, NB: Queen's Printer, June 1960), 186.

12 *Acadiensis*

peaking power.²² Third, following the advice of Acres, the report recommended that, regardless of whether or not Maine developed the upper St. John River, New Brunswick should proceed with the development of a single, large, high-head dam rather than the series of smaller, low-head dams proposed by the IJC. Acres contended that the lower power capacity of low-head dams did not justify the heavy development expenses. Finally, and most importantly, the report identified Mactaquac as the most promising site for major hydro development based on its geophysical features.²³

The board also explored, in much less detail, the impact of the proposed hydro developments on the river's "other water uses." In doing so, it tended to downplay potential negative impacts while expressing confidence in scientific solutions. These negative impacts included poor water quality in the area just upstream from the proposed Mactaquac dam, the destruction of the pheasant habitat along the river, and, most importantly, the further decline of the river's Atlantic salmon population.²⁴ Indeed, some federal Department of Fisheries officials argued that Mactaquac posed a greater danger to the St. John River salmon than other potential dam sites and called for more detailed (and expensive) studies. They did not accept the position of NBEPC engineers that the salmon problem could be solved by maintaining only minimum river flows. The board went ahead without the analysis of the impact on the fisheries, playing down those concerns in its report.²⁵ While acknowledging that habitat changes might negatively impact the salmon and pheasant populations, the report cheerfully predicted that other species would take their place. Nevertheless, the report concluded "special measures will have to be taken to counteract any adverse effects arising from certain changes brought about by power developments. Such steps would enhance the value of the St. John River as an asset to the Province of New Brunswick."²⁶ These steps were not identified, but the statement reflects the NBEPC engineers' faith in modernization and scientific planning; there was no problem that could not be solved through "measures." Apparently, even the possible disappearance of the Atlantic salmon could be "counteracted" when the meaning and value of the St. John River was reduced to that of an "asset."

If the board's report gave only brief consideration to the impact of hydro development on animal habitat and ecology, it gave even less to the people who would be displaced by Mactaquac. It was estimated that at least 10,000 acres of land would be flooded (including a number of community schools, churches, and cemeteries) and hundreds of families forced to re-locate, but the report made no mention of these people's competing claim to the river. Their interests in the river, beyond the market value of lost property, were of a "sentimental nature" and essentially of no value

22 *Report of the Saint John River Board*, 186-9.

23 "System Power Study Progress Report No. 10 for Period Ending June 30, 1959," SJRB, RS 234-C-2, p. 7, PANB.

24 *Report of the Saint John River Board*, 182; "The Effects on Terrestrial Wildlife of the Proposed Mactaquac Dam, N.B.," SJRB, RS 234-21, PANB.

25 W.R. Houston, Chief, Fish Culture Development, Department of Fisheries to R.H. Clark, Chairman, Saint John River Board, 2 November 1959, SJRB, RS 234-15, PANB; R.H. Clark to A.L. Pritchard, 26 June 1959, SJRB Records, RS 234-15, PANB; Pritchard to Clark, 7 July 1959, SJRB, RS 234-15, PANB.

26 *Report of the Saint John River Board*, 189.

within the logic of the NBEPC. As well, the value of social and community relations and the connections of individuals to place were to be ignored. The board was aware that the Mactaquac dam would flood one of the most important Aboriginal archaeological sites in eastern North America at Meductic. None of these “uses” was acknowledged in their report. Indeed, the assumption running through the report (and throughout the board’s records) is that the interests of electrical development should take precedence over all other users of the river. Nor should this be surprising, given that the board was composed exclusively of individuals closely linked to the hydroelectric sector who shared the broader “high modernist” faith in state-led modernization.²⁷ At another level, the Saint John River Board planning exercise reflected NBEPC’s increasing hegemony over electrical power planning within the province and its control of the pace and nature of the exploitation of the St. John River system. It also demonstrated that, for both the board and the NBEPC, the value and meaning of the St. John River lay in its potential to produce power; other interests were to be accommodated if necessary, and ignored if possible.

The Saint John River Board’s report would not be made public until 1964. Upon receiving the report in 1960, both the federal and provincial governments decided “that the time was not propitious for the release of the report to sources outside of the government.”²⁸ Minutes from the NBEPC’s monthly meetings suggest that there was some concern on the federal side that the release of the report might complicate ongoing Canadian-American negotiations over the Columbia River power project.²⁹ However, given the lawsuits arising from the Beechwood project in 1960, it is also reasonable to assume that NBEPC officials would not have welcomed the federal fisheries scientists’ negative assessment of the fate of the St. John River salmon fishery should more hydroelectric projects be developed. Delaying the public release of the report bought the NBEPC some time to plan the next major project and to develop a strategy to address the opposition that would surely arise.³⁰ In the meantime, the NBEPC began to focus on the Mactaquac site identified by the Saint John River Board. In public, utility officials said little about the next phase of hydro development; but behind the scenes, preparations continued apace. H.G. Acres, which by this time was acting as a private planning arm of the public utility, conducted preliminary engineering work at the Mactaquac site and a Board of Consultants was created to review this work.³¹ By 1963 planning had progressed far enough that NBEPC officials began to discuss publicly the proposed project that, utility General Manager Reg Tweeddale noted, would double the commission’s power output and “back up the water of the Saint John River in a huge lake extending as far upstream as Woodstock.”³²

27 The board included no industrial interests and no state experts on other electrical sources (such as fossil fuels or transmission interconnections).

28 Arthur Laing to D.A. Riley, 31 January 1964, SJRB Records, RS 234, file 3, PANB.

29 NBEPC Minutes, 11 September 1960, Central Records, NB Power Archives.

30 The report was only released after the NBEPC gave its blessing in January 1964. See Arthur Laing to D.A. Riley, 31 January 1964, SJRB, RS 234, file 3, PANB.

31 NBEPC Minutes: 9 November 1960, 11 October 1962, Central Records, NB Power Archives; H.G. Acres and Company Limited, *Report on the Mactaquac Development* (May 1961).

32 “Increased Power Plans Outlined,” *Telegraph Journal* (Saint John), 10 January 1963.

While NBEPC's engineers planned the technical aspects of the Mactaquac hydro plant, Tweeddale became interested in expanding the project along the lines of the TVA's multi-purpose regional development model. Created in the midst of the Great Depression in the United States, the federally owned TVA is, according to political economist James C. Scott, one of the best examples of high modernism. Experts (engineers, economists, and state planners) used hydroelectric development as the springboard for broader social and economic modernization initiatives in the poverty-stricken Tennessee Valley. Initially the TVA employed what became known as multi-purpose planning in terms of the development of the river. Experts (not politicians) planned the full development of the river valley, incorporating flood control, hydro development, resource conservation, and social development.³³ Tweeddale's interest in multi-purpose planning was sparked by a chance meeting, while on vacation in the southern United States in the winter of 1960, with the chairman of the TVA. Tweeddale later recalled that he got "a good indoctrination" on the benefits of multi-purpose planning from his TVA host.³⁴

Tweeddale's growing interest in the TVA is evident in the Saint John River Board's report. In the sections on recreation and other water uses, it is noted that the NBEPC accepted "the principle of multipurpose usage" of storage ponds around hydro sites. However, this commitment was half-hearted at best; while the report outlined potential recreational uses of the head pond (public parks, marinas, beaches, etc.), it also noted that the NBEPC would limit its role to making development suggestions to private investors and municipalities.³⁵ Moreover, the report completely ignored the impact of large-scale hydroelectric development on the people living along the river whose farms and communities would be flooded. This bore little resemblance to the idealized TVA multipurpose development model.

In 1961 Tweeddale proposed a more ambitious approach to comprehensive planning in a paper delivered to the National Conference on Renewable Resources. Here he proposed an international St. John River Basin authority – composed of

33 According to Donald Pisani, the key elements of the multipurpose idea were as follows: 1) water resources must be developed in conjunction with other local natural resources; 2) water projects developed over time must be planned carefully; 3) power and irrigation developments must not interfere with "the use of a river for transportation and commerce"; 4) revenue from the sale of hydropower should be used to offset costs of other developments on the river; and 5) an autonomous body of experts, rather than politicians, should manage and coordinate development of the river. See Pisani, "A Conservation Myth: The Troubled Childhood of the Multi-Purpose Idea," *Agricultural History* 76, no. 2 (Spring 2002): 155-6.

34 While passing through Tennessee on his way back from Florida, Tweeddale read in the local paper that the annual meeting of the TVA was being held in Chattanooga. Intrigued, he attended the meeting and was greeted by the chairman as a "long lost brother." At the chairman's invitation, Tweeddale also apparently organized a visit to the TVA headquarters by a delegation of Canadian utility representatives. See Reg Tweeddale, interview by Janet Toole, October 2000, transcript 2, pp. 3-6, MC 2923, PANB. Tweeddale's meeting took place at a crucial moment in the history of the TVA. Comprehensive planning had fallen out of favour in the United States during the early Cold War and the TVA had been relegated to being an electricity provider. Beginning in 1959, though, senior TVA officials, sensing that the political winds were changing, began promoting a return to the multi-purpose ideal. See William Bruce Wheeler and Michael J. McDonald, *TVA and the Tellico Dam 1936-1979: A Bureaucratic Crisis in Post-Industrial America* (Knoxville, TN: University of Tennessee Press, 1986), chap. 1.

35 *Report of the Saint John River Board*, 175-7.

representatives of the governments of the United States, Canada, Maine, New Brunswick, and Quebec – to plan and develop the river’s resources. In addition to coordinating hydroelectric power development, this authority would plan recreational developments, “corrective flood control measures,” the modernization of agricultural and forest resources in the basin, and the reduction of river pollution.³⁶ In June 1962, Tweeddale continued to push the idea at a conference at the University of New Brunswick on “The Multipurpose Development of the Saint John River.” This conference – which brought together state and utility planners from Canada and the United States to discuss the potential for multi-purpose development of the river – generated, at best, half-hearted support for the concept. One participant suggested that the economic benefits from multi-purpose development would be modest while others cautioned that an international river basin authority might get bogged down in jurisdictional conflicts between provincial and state governments and between private and public power producers. In the end, Tweeddale and John S. Bates (who, as chair of the New Brunswick Water Authority, saw in these multi-purpose development proposals an opportunity to promote pollution control along the river) were the most enthusiastic proponents of the proposal at the conference.³⁷

Despite Tweeddale’s personal interest in the TVA model, multi-purpose planning was not a major part of Mactaquac planning until 1963. The province’s embrace of the concept had as much to do with the availability of federal funds as with a strong ideological commitment to multi-purpose planning. The decade of the 1960s was marked by the creation of a number of federal agencies designed to reduce rural and regional poverty. Of particular relevance for hydroelectric development along the St. John River were the Atlantic Development Board (ADB) and the Agricultural Rehabilitation Development Agency (ARDA). Formed originally in 1962 as an advisory agency on regional development planning, the ADB was transformed under the new Liberal government of Lester Pearson into a funding agency for regional infrastructure projects. ARDA was founded in 1961 by the Diefenbaker government to promote rural development through shared cost programs. The Pearson government endowed the agency with more funds and, increasingly, its focus became planning the social and economic development of poorer (and “backward”) regions.³⁸ By 1963 New Brunswick had put in place a provincial ARDA committee to identify rural development opportunities. Among the senior civil servants appointed to this committee was General Manager Reg Tweeddale of the NBEPC.

NBEPC officials were quick to recognize the relevance of the ADB to the Mactaquac development. In April 1963 the utility prepared a draft submission to the

36 R.E. Tweeddale, “Paper on Organizing for Multipurpose Development on the Saint John River,” (presented at the National Conference on Renewable Resources, 24 October 1961), Department of Regional and Economic Expansion (DREE) Records, RG 124, vol. 44, file 4030, Mactaquac General Correspondence, 1962-67, LAC.

37 Proceedings of “Conference on the Multipurpose Development of the St. John River” (University of New Brunswick, 22-23 June 1962), DREE Records, RG 124, vol. 44, file 4030, Mactaquac General Correspondence, 1962-67, LAC.

38 On the emerging regional development policy field, see, for instance, Donald Savoie, *Regional Economic Development: Canada’s Search for Solutions* (Toronto: University of Toronto Press, 1986) and James Bickerton, *Nova Scotia, Ottawa and the Politics of Regional Development* (Toronto: University of Toronto Press, 1990).

board requesting federal funds to reduce the cost of power generation in the province, including grants for the construction of hydroelectric developments. The NBEPC utilized the “public power for industry” logic to justify this aid. Base metal mines in northern New Brunswick were coming into production and one large concern was about to begin construction of a lead-zinc smelter and chemical/fertilizer complex. The cost of power, the draft claimed, would be crucial to the development of these industries.³⁹ The final brief, submitted in October 1963, was much more detailed and made the same “power for industry” argument with one major addition: a whole section on the need to plan multi-purpose development of the St. John River Basin and a request for federal funds for that purpose.⁴⁰ This change in emphasis reflects a broader recognition by provincial officials of the political value of multi-purpose development in trying to access federal funds. Throughout early 1963, Robichaud’s Liberal government was attacked by the opposition Progressive Conservatives for failing to take advantage of federal rural development programs. In response, the government asked the provincial ARDA committee to come up with some proposals. NBEPC general manager and ARDA committee member Tweeddale apparently saw an opportunity to promote multi-purpose development of the Mactaquac project. It was anticipated that over 10,000 acres of farmland would be flooded and that almost 500 families would be dislocated. Here, then, was an opportunity to use federal funds to plan rural adjustment and modernization. He told the committee that he “preferred to look upon the proposed development [Mactaquac] not simply as a power producing installation, but as an opportunity to guide and organize the use and development of the natural resources in the affected area to best advantage for a variety of purposes.”⁴¹ At its August 1963 meeting, the utility advised the government to emphasize the multi-purpose aspects of the Mactaquac development in trying to win ADB funds. The Robichaud government, which was experimenting with social planning in other areas, was easily persuaded of the logic of tying hydro development to multi-purpose development.⁴² Once provincial officials realized that multi-purpose development meshed well with ARDA’s rural development mission, they began to promote the

39 R.E. Tweeddale to Hon. Donald Harper, 18 February 1963, Robichaud Papers, RS 416, 1963, file 223, PANB; “The Submission of the New Brunswick Electric Power Commission to the Atlantic Development Board, April 3, 1963,” SJRB Records, RS 234-24, PANB.

40 In particular, the brief recommended studies into the promotion of waterborne inland transportation (upriver from the dams), the promotion of agricultural development/rationalization, flood control, pollution control, development of tourist facilities, and the creation of new hunting and sport fishing opportunities. See “Brief to the Atlantic Development Board Relating to the Supply of Electric Power in New Brunswick and the Comprehensive Development of the Resources of the Saint John River Basin,” Section 8, October 1963, SJRB Records, RS 234-24, PANB.

41 “NB ARDA Committee Minutes of Meeting 6.6.63,” Deputy Minister of Agriculture Records, RS 124, G14C, PANB; Reg Tweeddale interview by Janet Toole, October 2000 transcript 2, pp. 3-6, MC 2923, PANB.

42 NBEPC minutes, 22 August 1963, Central Records, NB Power Archives; “NB ARDA Committee Minutes of Meeting 13.11.63,” Deputy Minister of Agriculture Records, RS 124, G14C, PANB. In particular, the Robichaud government was trying to have northeastern New Brunswick, the site of the new mining development, designated as a special rural development area. Later in the decade the government would launch its Equal Opportunity initiatives, designed to improve social services in poorer (and largely Acadian) regions of the province. See, for instance, Stanley, *Louis Robichaud* (Halifax, NS: Nimbus, 1984), chap. 8-12; and Kenny, “A New Dependency.”

concept publicly. In October 1963 Robichaud and Tweeddale embarked on a much-publicized “power tour,” which included visits to Washington State, where they toured multi-purpose developments along the Columbia River, and to the Tennessee Valley Authority.⁴³

In January 1964 the federal ADB granted New Brunswick \$20 million for the construction of the Mactaquac dam. Interestingly, federal cabinet documents made no reference to multi-purpose development. Instead, the grant was justified as a means of providing “cheap power for resource development” in both New Brunswick and the Maritime Provinces generally. It was predicted that the federal grant would reduce the long-term cost of power at Mactaquac from 4.4 to 3.3 mills per kilowatt-hour and reduce the overall cost of power in New Brunswick from 6.1 to 5.6 mills per kilowatt-hour. These lower rates were, under the terms of the ADB grant, to be used to reduce the rates of power to industry; any surplus power was to be “made available at reasonable rates to Nova Scotia and, if feasible, Prince Edward Island.”⁴⁴ With the ADB grant now in hand, the NBEPC formally announced that construction of the 504,000 MW Mactaquac facility would begin in 1965. It was projected that the first two generators would begin producing power in 1968 and that the whole system would be completed by 1976. This would, utility and government officials explained, help meet provincial demands for power, which were projected to quadruple by 1980. The project was estimated to cost \$113 million, an amount that exceeded the provincial government’s annual revenue, and would employ 2,500 people during the peak construction period. In announcing the project, utility officials noted that while Mactaquac “will have a diluting effect on the average cost of power in New Brunswick,” its “prime purpose will be to attract ‘power intensive industries’ to the province.” Daniel Riley, however, the minister in charge of the NBEPC, also alluded to the multi-purpose potential of the project, which he acknowledged was an important part of the utility’s ADB proposal. Among the possible multi-purpose projects were the reclamation of lands downriver for agricultural purposes that regularly flooded, irrigation from the river, the construction of experimental farms to “promote modern farming techniques,” development of fish and game resources, and the creation of public parks, beaches, campsites, and marinas above the dam and at the reservoir site.⁴⁵ However, this seemed more a “laundry list” than a comprehensive plan.

From the outset there appeared to be a strong political consensus around the Mactaquac project. The leader of the opposition Progressive Conservative Party, C.B. Sherwood (whose predecessor had first linked hydro development and the province’s economic resuscitation) was a supporter. Indeed, in the 1963 provincial election the Progressive Conservative Party promoted a “power policy” that called for the “early construction of the Mactaquac hydro dam.” Sherwood, in fact, claimed “The Conservative Party has always stood for power development as a proper medium to

43 “NB to Study US Power Developments,” *Telegraph Journal*, 12 October 1963; “Premier and Officials Study Mactaquac Model,” *Telegraph Journal*, 16 October 1963; “Study Power Development,” *Telegraph Journal*, 17 October 1963.

44 “Record of Cabinet Decision,” 10 January 1964, DREE Records, RG 124, vol. 152, file 29/01/07, LAC. A “mill” is a tenth of a cent per KWH.

45 “The Meaning of Mactaquac: More, Cheaper Power From Harnessed River,” *Telegraph Journal*, 16 January 1964.

create a climate attractive to the establishment of new industries.”⁴⁶ Not surprisingly, much of the business community also approved. The emergent mining industry (located in the northern part of the province) was joined in its support for the project by the Maritime Provinces Board of Trade, the Canadian Manufacturers Association, and the New Brunswick Federation of Labour.⁴⁷ But even the project’s most fervent supporters should not have been surprised that the mega-project generated social conflict. After all, Mactaquac required the creation of a 55-square-mile reservoir, the purchase or expropriation of over 10,000 acres of land, and the dislocation of an estimated 3000 residents, including 13 Maliseet families living on a local reserve. Churches and graveyards would have to be relocated, and an ancient Malecite burial site at Meductic, a national historic site, would be flooded.⁴⁸ Moreover, the dam would constitute yet another barrier to Atlantic salmon trying to return to their spawning grounds in the upper reaches of the St. John River.

Unlike the Tobique and Beechwood projects – where opposition was disorganized and post hoc – opponents of Mactaquac began to organize themselves almost immediately after the development was announced in January 1964. Dr. George Frederick Clarke played a key role in organizing the project’s opponents. Clarke was a well-known Woodstock dentist, salmon angler, naturalist, and prolific writer whose publications ranged from novels situated in rural New Brunswick to books on the pleasures of salmon fishing and histories of the Acadians and the local Maliseet communities.⁴⁹ He became the most prominent and articulate spokesperson for those opposed to the Mactaquac dam. The other public spokespersons for the opposition were Ken Homer, a freelance broadcaster who proved to be very proficient in getting the opposition message into the media, and Robert J. Speer, a local dairy farmer. These men were instrumental in creating, in the winter of 1964, the Association for the Preservation and Development of the Saint John River in its Natural State (APDSJR). Over the next year this organization would mobilize the local population against the mega-project through letters to the editor, advertisements, public meetings, and petitions.⁵⁰

The APDSJR brought together New Brunswickers who were opposed to Mactaquac for a variety of reasons. Some residents of Fredericton, located 14 miles downstream, questioned the structural integrity of the dam. A letter writer to *The Maritime Farmer* complained “[a] dam, over 100 feet high which will form a

46 “PCs Cite Power as Election Plank,” *Telegraph Journal*, 15 March 1963.

47 L.J. Robichaud to Robert J. Speer, 19 November 1964, Robichaud Papers, RS 416, 1964, file 226, PANB.

48 Ferrar also discusses the arguments presented by Mactaquac’s opponents. See Ferrar, “Power for Progress,” chap. 4. For the present study, a survey was conducted for the 1963-65 period of the following newspapers: *The Daily Gleaner* (Fredericton), *the Woodstock Sentinel*, *the Telegraph Journal*, and *the Hartland Observer*.

49 See, for instance, books by George Frederick Clarke: *The Magic Road* (London: Mills and Boon, 1925); *Noel and Jimmy – Why* (Fredericton, NB: Brunswick Press, 1959); *Too Small a World: The Story of Acadia* (Fredericton, NB: Brunswick Press, 1958); *Six Salmon Rivers and Another* (London: H. Jenkins, 1960).

50 Speer served as chairman of the association. Interestingly, opponents of the TVA’s Tellico dam on the Little Tennessee River formed a similarly named organization in October 1964 – the Association for the Preservation of the Little Tennessee River. The authors could not locate any evidence of communication between the two groups. See Wheeler and McDonald, *TVA and Tellico Dam*, 75-6.

reservoir over fifty miles long, containing billions of gallons of water, is to be built above a city which is barely high enough to escape the annual spring freshet. . . . Just consider . . . what the result would be if an earthquake or some other force of nature should release this immense quantity of water in one gigantic wave.” Other letter-writers reminded readers of recent dam breaks in the United States, implicitly highlighting the limits of engineering.⁵¹ Local farmers publicized the implications of losing fertile farmland in a province where 85 per cent of the land is forested or with poor soil. And sports fishers, who had earlier mobilized in the aftermath of the construction of the Beechwood dam, were key opponents to Mactaquac. Members of the New Brunswick Fish and Game Protective Association argued that, because of the size of the proposed head pond at Mactaquac (55 miles), the water would be too still and with such a low oxygen content that the Atlantic salmon would “surely [be] finished off.”⁵² The fishing lobby was not assuaged by the utility’s plans to collect and transport salmon upriver, nor was it optimistic about the planned establishment of a nursery at the base of the dam. Opponents noted the detrimental effects on the salmon of the smaller Tobique and Beechwood developments and were concerned about the mortality of salmon passing through turbines on the return trip downriver. The association was supported in its opposition by a number of American sports fishers, who sent letters to local newspapers expressing their concerns. Delegates to the association’s 1964 annual meeting passed a resolution calling on the government to delay the project until an independent study could be conducted of the impact of the dam on the sport salmon industry.⁵³

Other opponents focused on the impact of Mactaquac on the historical and aesthetic value of the river valley. The area scheduled for flooding included an ancient Maliseet burial site at Meductic and Loyalist settlements dating back to the 1780s. Local historical associations condemned the planned destruction of the region’s historical buildings, Aboriginal and non-Aboriginal cemeteries, and connection with the past.⁵⁴ In letters to the editor, residents noted that they were being forced to leave lands granted to their Loyalist ancestors, individuals whose lands had been confiscated in the United States at the end of the Revolution. Opponents also tried to link their cause to the 1755 expulsion of Acadians from Nova Scotia, a strategy that seemed targeted at Premier Louis Robichaud, the province’s first elected Acadian premier; as one letter writer to the *Daily Gleaner* observed: “The upheaval the Mactaquac dam will cause [will be] comparable only to the expulsion of the Acadians.”⁵⁵ Others wanted to maintain the river in its “natural state,” arguing that

51 “Man’s Inhumanity to Man,” *The Maritime Farmer*, 18 February 1964; “Opposed to Mactaquac,” *Daily Gleaner*, 27 January 1964; “Against Building the Dam,” *Daily Gleaner*, 6 February 1964.

52 J. Bennett MacCauley to Hon. Louis J. Robichaud, 2 March 1964, and Kenneth C. Homer to Robichaud, 19 May 1964, Robichaud Papers, RS 416, 1964, file 226, PANB; “Anti-Mactaquac Group Asks Study,” *Daily Gleaner*, 16 April 1964.

53 For example, see “New Yorker Against Mactaquac,” *Daily Gleaner*, 6 February 1964, and J. Bennett Macaulay to Hon. Louis J. Robichaud, 10 July 1964, Robichaud Papers, RS 416, 1964, file 226, PANB.

54 Charlotte County Historical Society to Robichaud, 23 October 1964, and Carleton County Historical Association to Robichaud, 29 October 1964, Robichaud Papers, RS 416, 1964, file 227, PANB.

55 See for instance, “Man’s Inhumanity to Man,” *The Maritime Farmer*, 18 February 1964, as well as “Wants Data on Mactaquac,” *Daily Gleaner*, 23 January 1964.

flooding would destroy the natural beauty of the “the Rhine of North America.” The valley’s natural beauty, APDSJR leaders argued in a brief to the government, should be valued both aesthetically and for economic reasons: “The word ‘beauty’ seemed to have fallen into disrepute for a time in this scientific age, but recently it has reappeared in the vocabulary of economists who have begun to realize that natural beauty has a major dollars and cents value for any region fortunate enough to possess it.” The brief went on to explain that the river’s salmon fishery, natural beauty, and historical significance could be cultivated as tourist attractions.⁵⁶

The APDSJR was a ubiquitous presence in the province’s media throughout 1964. Its leaders organized letter-writing campaigns to newspapers and politicians, produced print and radio advertisements, and held information meetings for local residents. Ken Homer spoke of the “crime of Mactaquac,” and George F. Clarke condemned “the rape of our heritage” and the destruction of the St. John River. At one meeting he encouraged fellow residents to stand up against the NBEPC: “These farms are yours; these homes are yours; the graves are the graves of your ancestors – fight for them.” At the same meeting, Ken Homer emphasized the need for organized opposition: “As individuals we wouldn’t have a chance but as a group our story will be known. If we stick together the Mactaquac Power Project may not be built.”⁵⁷ By July 1964 the APDSJR had gathered nearly 1000 names for a petition calling on the provincial government to delay the project and commission an independent study of the NBEPC’s proposal. The association was concerned that “factors other than power advantages have been ignored” – factors such as the tourist value of the river in its “natural state” and the salmon industry. The petition also dismissed the utility’s multi-purpose development plans as Mactaquac’s “primary purpose is to produce power. It is no isolated hydro site in the uninhabited wilderness. It is in a settled area where the building of a dam would result in widespread destruction, as well as human anguish and anger.”⁵⁸ Finally, it condemned the NBEPC for not considering other power possibilities, such as the purchase of power from other jurisdictions (i.e., Churchill Falls in Labrador), tidal power along the Bay of Fundy, or nuclear power. The petitioners demanded that Mactaquac be postponed while independent studies were carried out into the feasibility of electrical alternatives.

The opposition to Mactaquac had an impact on the otherwise pro-hydro Conservative politicians in New Brunswick. At a special session of the legislature to discuss the Mactaquac project in late-February 1964, some Conservative MLAs, including Carleton County MLA Richard Hatfield, questioned whether other forms of electricity might be more economical than hydro.⁵⁹ Later, Carleton-Victoria Member of Parliament Hugh John Flemming, who, as premier during the 1950s was one of the architects of the “power for industry” growth model, called on the province to “stop,

56 “Mactaquac Opposed,” *Daily Gleaner*, 19 February 1964; Robert J. Speer to Robichaud, 9 July 1964, Robichaud Papers, RS 416, 1964, file 226, PANB.

57 “Mixed Feelings on Mactaquac,” *Telegraph Journal*, 11 February 1964; “Anti-Mactaquac Group Asks Study,” *Daily Gleaner*, 16 April 1964.

58 Robert J. Speer (Chairman, Association for the Preservation and Development of the Saint John River in its Natural State) to Robichaud, 9 July 1964, Robichaud Papers, RS 416, 1964, file 226, PANB.

59 “Mactaquac Legislatures Transcript of Tapes from February 25, 26, 27, 1964, Legislative Assembly Re Mactaquac Project,” ref. 0204-0402, file A20, Central Records, NB Power Archives.

look and investigate' other sources of power." Echoing the APDSJR, Flemming expressed concern that "the project would destroy the 'heritage of the beautiful river,' [and the] salmon stocks, flood churches and cemeteries and radically change the appearance of the scenic Saint John River."⁶⁰ By September 1964 Leader of the Opposition C.B. Sherwood was also bending to public pressure, demanding that the government delay the project and consider alternative sources of power.⁶¹

Utility officials were caught off guard by the intensity of the opposition to Mactaquac. In a presentation in 1967 to the American Public Power Association (APPA) a senior NBEPC engineer stated that the opposition was so strong to Mactaquac that the dam might not have been built had it not been for the success of NBEPC's aggressive public relations strategy, which was designed specifically to undermine the opposition to the dam. Concerned that Mactaquac's opponents were too preoccupied with sentiment and unwilling to accept "sound engineering facts," the utility tried to get their modernization message out through briefings to editorial writers, media advertisements, paid public affairs broadcasts, promotional materials, public speeches by employees and politicians, and an extensive on-site public relations office with promotional tours and events. Central to all of these efforts was the attempt to shift the focus from the Mactaquac dam as a power project to the dam as a component of a much larger multi-purpose social program, even though most of these secondary activities were beyond the mandate of the NBEPC.⁶² The utility's public relations strategy was clearly informed by high modernism. In public meetings and press releases, NBEPC engineers and government leaders relentlessly used the slogan "Progress through Power" to emphasize the relationship between hydro development and modernity. Reg Tweeddale described electricity as the "life-blood of modern society," adding that low-cost, abundant power was "vital to any developing community." Premier Robichaud and NBEPC Chairman Daniel Riley echoed this theme, predicting that cheap power would attract industry and prosperity to the under-developed province; "in short," Robichaud stated in a television broadcast, "Mactaquac means the economic salvation of our province."⁶³

The NBEPC's strategy was to respond to the opposition in a calm and rational manner, emphasizing the scientific basis for the utility's actions. In a series of public meetings throughout the region and in countless interviews Tweeddale and Riley assured residents that the Mactaquac project was "well-planned and coordinated," that it had been undertaken only after "objective" engineering studies by experts, and that any problems created by the dam could be addressed by scientific solutions. Residents forced to relocate would be compensated fairly by a board of experts (based on a similar TVA board). The fisheries problem would be solved by the construction of a

60 "Flemming says Mactaquac Plan Will Destroy Area's Heritage," *Daily Gleaner*, 3 March 1964.

61 "NB Opposition Leader Demands Review of Mactaquac Dam Policy," *Daily Gleaner*, 4 September 1964.

62 NBEPC, "Mactaquac Hydro Development: A Paper for Presentation to the American Public Power Association Public Relations Achievement Competition" (Washington, DC, 15 April 1967, pp.1-2, 10, 16, file S3510242, Central Records, NB Power Archives. We are indebted to Katie Ferrar's research for drawing our attention to the availability of this document.

63 See, for instance, "More Progress Through Power is NBEPC Plan," *Daily Gleaner*, 19 March 1964; "Premier Stresses Mactaquac, 'Quoddy'," *Daily Gleaner*, 6 February 1964.

salmon hatchery at the base of the dam, an elaborate trucking system to move spawning salmon above the dam, and a fishway. Fredericton residents concerned about a catastrophic dam burst were assured that the “best engineering consultants in North America” had approved the design of Mactaquac.⁶⁴

Utility officials also looked to engineering and science to address the problem of social dislocation caused by the Mactaquac development. As in other parts of the world, New Brunswick state planners invoked the TVA model of multi-purpose development as a symbol of modernity and development.⁶⁵ This had value from a public relations perspective in addressing the concerns of Mactaquac’s opponents. Tweeddale had been promoting multi-purpose development for some time, but state officials were unable to provide many details other than a few general references to community and economic development, pollution control, and the construction of recreational facilities around the dam site. So unclear were NBEPC officials about the concept that, in August 1964, a senior official was sent to meet with TVA representatives to inquire as to “what . . . the TVA really meant by the term ‘multi-purpose’ . . . and what might it mean to the Commission on the Saint John River.”⁶⁶ To help make the case for such development, the province asked ARDA in the spring of 1964 – in the midst of the protests against the hydro project – to designate the Mactaquac region a special rural development area and thereby make it eligible for federal funding for multi-purpose planning and development.⁶⁷ To support its request, the NBEPC contracted (without tender) H.G. Acres to quickly design a rural development plan to accompany the hydropower development. Over the next year Acres, which had its own social planning branch, produced a number of reports outlining the Mactaquac Regional Development Plan. The flooding associated with the dam was presented as an opportunity for the state to modernize a rural region that had been in decline both economically and demographically for some time. Contrary to the claims of Mactaquac’s opponents, the report concluded that many of the region’s farms were marginally viable, and those that continued to exist after the flooding needed to be rationalized into more productive units. People displaced by the dam should be retrained and relocated to a “growth community,” where the government should encourage the establishment of a pulp and paper/sawmilling complex. Acres proposed the establishment of a large recreational facility at the head pond and “a vigorous program of pollution abatement on the Saint John River” to encourage tourists and the river’s fishery.⁶⁸ Finally, Acres explored the state’s role in changing the attitudes of local residents who had not been integrated into the urban, industrial world. Relocation associated with Mactaquac would provide an opportunity

64 “Mactaquac Aspects Outlined at Public Meeting,” *Telegraph Journal*, 7 March 1964.

65 Daniel Klingensmith, “Building India’s ‘Modern Temples,’” 137-9.

66 “Notes of meeting of A.J. O’Connor with TVA Officials,” 8-10 August 1964, RS 173, D7, PANB.

67 J. Adrien Levesque (Minister of Agriculture) to Hon. Maurice Sauvé (Minister of Rural Development and Forestry), 5 March 1964, RS 173, D7, PANB; Robichaud to Sauvé, 29 May 1964, Robichaud Papers, RS 416, 1964, file 226, PANB.

68 “NB ARDA Sub-Committee on Mactaquac Minutes of meeting, 17-6-64,” Deputy Minister of Agriculture Records, RG 124, G14C, PANB; H.G. Acres, “Proposal for a Planning Survey of the Area Affected by a Dam at Mactaquac,” DREE Records, RG 124, vol. 44, file 4030, Mactaquac General Correspondence, 1962-67, LAC; H.G. Acres, *Mactaquac Regional Development Plan Summary Report* (Niagara Falls, ON: H.G. Acres and Company, March 1965).

to convince these people to “commit to a modern way of life”: “Once . . . [a local resident] moves and establishes a new household, he and all other members old enough, go out to work in any available low skilled job. What happens is that the household now purchase goods and services with the expanded cash income that formerly were produced at home.” However, community leaders would also have to be mobilized to encourage this transition. Ultimately, Acres argued that multi-purpose development was central to the modernization process: “Multi-purpose development seeks to influence the individual’s life by linking his behaviour more closely to patterns established by modern societies.”⁶⁹ Opponents, such as Ken Homer, were unconvinced by the linkage between multi-purpose rural development and hydro. Was it not possible to implement a rural development scheme separate from the Mactaquac power plant? Indeed, Homer was convinced that Mactaquac “was a power project and nothing else. . . . The claims by the Power Commission [regarding multi-purpose development] were just a screen.”⁷⁰

While NBEPC engineers appealed to science and planning to address concerns about fisheries and relocation, they had more difficulty dealing with opponents’ concerns about the destruction of communities and history. As Scott notes, for high modernists, “the past is an impediment, a history that must be transcended; the present is the platform from which the aspirations to a better future will be launched.”⁷¹ NBEPC officials were prepared to move houses and historically significant churches and to disinter and move remains from cemeteries. They also called in federal archaeologists to conduct field studies at the Maliseet burial grounds in preparation for the flooding. Later, the government would build a historic site at King’s Landing, along the St. John River, composed, in part, of historic buildings moved from areas that were to be flooded. However, local residents’ attachment to place – to local history and long-standing social relations – was more intangible and could not be addressed easily. Tweeddale described this as a sentimental loss, something for which compensation could not be given, and encouraged residents to focus less on the past and more on the future. The Mactaquac multi-purpose complex would create prosperity, new modern communities, and a new site of beauty (the headpond). Premier Robichaud echoed these modernization sentiments, and appealed to the region’s heritage to promote Mactaquac when he described the Mactaquac Regional Development Plan as

an excellent example of man’s effort to plan for a better future. Specifically, it seeks to point the way to economic progress in a rural area peopled by descendents of the pioneers and developers of new land, of whom I often think with admiration and humility, for

69 H.G. Acres, *The Mactaquac Regional Development Plan Community Social Structure and Program Implementation: Interim Report* (Niagara Falls, ON: H.G. Acres and Company, February 1965), 54-5, 50.

70 “Anti-Mactaquac Group Asks For Study,” *Daily Gleaner*, 16 April 1964. In the special legislative session on Mactaquac, MLA Richard Hatfield also questioned why the rural development plan had to be linked to power. See “Mactaquac: Legislature’s Transcript of Tapes from February 25, 26, 27, 1964, Legislative Assembly Re Mactaquac Project,” ref. 0204-0402, file A20, Central Records, NB Power Archives.

71 Scott, “High Modernist Social Engineering,” 16.

they laboured long and hard and intelligently to pass on to us a fine legacy. I am confident that the present generation has inherited in full measure the fine qualities of their predecessors and that these qualities will be exercised to take full advantage of modern scientific and technological progress applicable to the rural economy.⁷²

The provincial government and the NBEPC also tried to defuse opposition by commissioning, in September 1964, a study reviewing the comparisons between the Mactaquac project and alternative sources of power. Opponents had claimed that it would be more economical for New Brunswick to buy power from the proposed Passamaquoddy tidal power project in Maine or the Churchill Falls power development in Labrador than to build Mactaquac. Not surprisingly, the consulting company H.G. Acres concluded “the Mactaquac project is more attractive than any alternative source of power which might be available at this time.” After Acres’s findings were confirmed by a second consulting company, the Robichaud government publicized them as evidence of the project’s feasibility.⁷³

Despite the APDSJR’s well-organized and effective campaign against Mactaquac, many New Brunswickers found the NBEPC’s modernization message compelling. Most of the province’s newspapers acted as cheerleaders for the project, publishing glowing editorials trumpeting the utility’s “progress through power” mantra.⁷⁴ In February 1964 the editor of the *Hartland Observer* argued that Mactaquac would bring the St. John River Valley “into the mainstream of contemporary life”:

We believe in progress and believe that the St. John River development should bring on better economic conditions provided that its real intention is realized, namely that new industry will follow its completion, that cheaper power will be brought to our citizens, and that our New Brunswick way of life will become equalized with other parts of the nation, by way of vastly improved economic conditions.⁷⁵

Woodstock’s mayor, Gerald Phillips, described Mactaquac as “progress in action.” Farmer Leonard Slipp, who was to lose some of his farm as a result of flooding, explained to a reporter: “Progress is something that has to go on even if the public does suffer.” And as the debate heated up, supporters portrayed the dam’s opponents as backward sentimentalists who must “put the public interest before their private grief.” One letter writer questioned whether “beauty [was] more important than progress,” concluding that “progress . . . cannot be halted for sentimental reasons only.” The editor of the *Daily Gleaner* reminded readers that Mactaquac was part of

72 Introductory letter attached to Acres, *Mactaquac Regional Development Plan Summary Report*.

73 H.G. Acres and Company Ltd to R.E. Tweeddale, 7 September 1964, Robichaud Papers, RS 416, 1964, file 226, PANB; Ebasco Services to Tweeddale, 21 September 1964, Robichaud Papers, RS 416, 1964, file 227, PANB.

74 See, for instance, “Mactaquac Opens Exciting Prospect,” *Woodstock Sentinel-Press*, 16 January 1964, as well as “What of Mactaquac,” *Hartland Observer*, 20 February 1964.

75 “What of Mactaquac,” *Hartland Observer*, 20 February 1964.

the integration of New Brunswick into the modern world: "From an isolated 'backwoods' area of the continent, we suddenly find we are becoming a hemispheric crossroads."⁷⁶ And while Mactaquac's opponents were vocal at the NBEPC's public meetings, one reporter recounted how "one lonely voice from the back [of the auditorium] stood in support of building the dam and brought an immediate response in resounding applause."⁷⁷

In November 1964 the APDSJR made one last appeal, presenting a brief calling on the Robichaud government, "as a Centennial gift to the Province of New Brunswick and future generations," to ban the construction of new power dams on the St. John River and to declare it a "historic waterway."⁷⁸ But, by this stage, both the engineering and, perhaps more importantly, public relations groundwork had been laid. The Robichaud government felt confident in rejecting the APDSJR's novel proposal. Mactaquac's opponents, especially George F. Clarke, would continue to make their case after construction of the dam and head pond began in 1965. In a February 1965 letter to the *Telegraph Journal*, he wrote: "The present generation has seen autocracy in action, their ancient rights and ancestral privileges willfully infringed by men who would treat the common man as little more than a serf."⁷⁹ Some members of the provincial Progressive Conservative Party also protested the project, but they, increasingly, focused on the manner in which contracts for the project were awarded.⁸⁰ In general, opponents became less vocal after construction began.

The province eventually succeeded in getting federal support for its broader development goals in the Mactaquac area, although not before Premier Robichaud assured the federal minister of forestry that the NBEPC would assume all of the compensation and relocation costs associated with the hydro development. ARDA officials agreed to fund the Community Improvement Corporation, which helped oversee the relocation of residents, the establishment of a new town site and pulp and paper plant at Nackawic, and the construction of a recreation complex. The federal government also funded the construction of the King's Landing Historic Village while the federal department of fisheries managed the fish hatchery at the dam site.⁸¹ These were the principal components of the Mactaquac multi-purpose plan, although it seems clear that the development was first and foremost a hydroelectric project. In his correspondence with the federal minister of forestry, Robichaud disentangled the hydroelectric project from multi-purpose development in a way that his government had been unwilling to do in its public debates with Mactaquac's opponents. "The only actual connection between the . . . hydro project and the multi-purpose rural

76 "For the Common Good," *Daily Gleaner*, 27 January 1964; "Let New Brunswick Advance," *Daily Gleaner*, 25 February 1964; "We Can't Go Back," *Daily Gleaner*, 25 March 1964.

77 "The Topic – Mactaquac," *Woodstock Sentinel Press*, 12 March 1964.

78 Robert J. Speer to Premier and Members of Cabinet, 25 November 1965, Robichaud Papers, RS 416, 1964, file 226, PANB.

79 "People Could Still Stop Mactaquac," *Telegraph Journal*, 16 February 1965.

80 "Opposition Leaders Lash Out at Government," *Telegraph Journal*, 17 March 1965.

81 For a good discussion of the implementation of the Mactaquac regional development plan, see Dickson, "Making New Brunswickers Modern." The federal government's \$20 million subsidy from the Atlantic Development Board was to go to the single purpose of subsidizing industrial power rates.

development program,” he advised Maurice Sauvé, “is that they are concurrent.”⁸² Despite this admission, state planners had been quite willing to link hydro and rural development in their public relations campaign against Mactaquac’s opponents. In June 1968, Mactaquac opened to much fanfare. Speaking before the gathered crowd, Premier Robichaud reiterated the link between power development and modernization. In thanking all of those who were involved in the project, including those who had been dislocated, he noted that together they had “harnessed the great Saint John River for the sake of a stronger Province, and a better life for our people.”⁸³

This new conception of the development of the river as the embodiment of modernity and progress, promoted most forcefully by NBEPC engineers, was shaped by the high modernist ideology that was prevalent throughout North America (and, indeed, the world) during this period. State officials embraced the link between technology-intensive mega-projects, scientific planning, and progress. The creation of federal regional development programs in the 1960s provided the NBEPC with an opportunity to link the dam with planned (and scientific) rural development. Electrical engineers, such as Reg Tweeddale and those within the consulting firm H.G. Acres, were quick to actively promote and engage in social engineering as they planned the relocation, retraining, and rehabilitation of people displaced by the hydro project. While the high modernist discourse was undoubtedly appealing to many in the “have-not” province, it is notable that some New Brunswickers opposed Mactaquac. Led by the well-organized APDSR, these opponents put forward an alternative development path, one which challenged the economics of Mactaquac and called for the NBEPC to obtain power from other sources, such as Churchill Falls. In doing so, these opponents challenged the high modernist values inherent in Mactaquac, demanding that the St. John River’s beauty, heritage, and eco-systems be factored into the modernization equation. This well-organized opposition ultimately failed, in large part because of the NBEPC’s control of the economic planning process in the province (which had been growing steadily in the post-war period). By the early-1960s, utility officials were able to use the power of the state to promote their own development model. They occupied important positions on inter-departmental and inter-governmental planning agencies, they hired other hydro consultants to conduct studies on the economic and social components of hydro development, and they had the resources to conduct a sophisticated public relations campaign linking Mactaquac with progress and modernity. While the Robichaud government approved wholeheartedly, it was the NBEPC that was ultimately responsible for the Mactaquac modernization scheme.

82 Robichaud to Sauvé, 29 December 1964, Robichaud Papers, RS 416, 1965, file 223, PANB. The monies from the federal ARDA program were not to be used to subsidize any of the costs of the Mactaquac dam, and they were not administered by NBEPC.

83 “The Honourable Louis J. Robichaud . . . Official Opening of the Mactaquac Hydro Development, Mactaquac, N.B., Saturday, 22 June 1968,” Robichaud Papers, RS 416, 1968, file 293, PANB.